Please connect the battery first, and then connect the solar panel after setting the system parameters. If you do not operate in order, the battery will be damaged.

SCC

MPPT

User's manual

12V/24V/48V Auto. (36V)

Catalogue

※

Focus	1P-2P
Product instructions	3P-12P
System voltage setting	P9
Battery type setting	P9
Load working mode	P10
Detailed parameters	P12

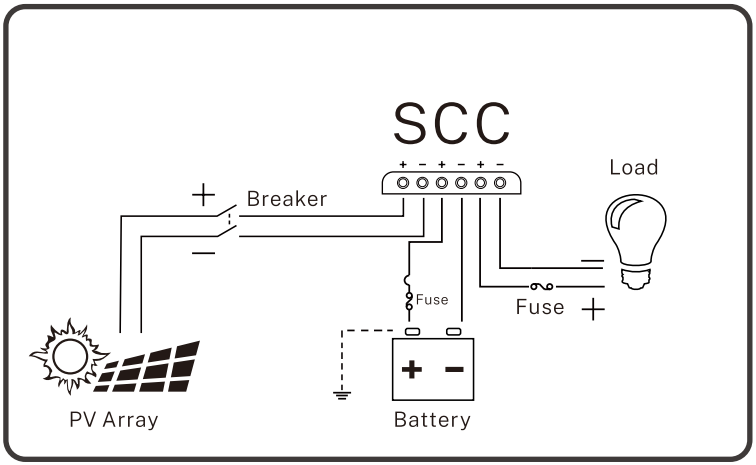
※

※

When using lithium batteries, please set the system voltage first,and then set the corresponding battery type(See P9-4.2 / P9-4.3 for more details)

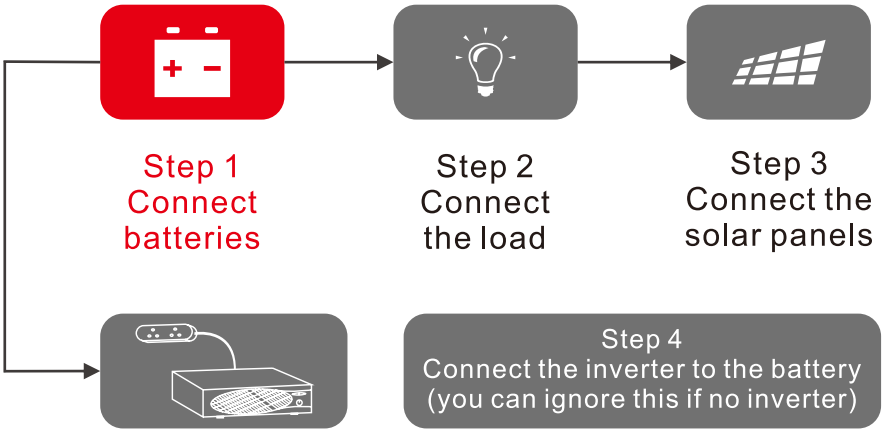
1.Wiring Instruction

Solar energy system wiring diagram



※ Wrong cable connections may damage the controller

※ Perform the following steps to connect cables and install them ※



When disassembling, refer to the above order to complete the reverse

2.Notice

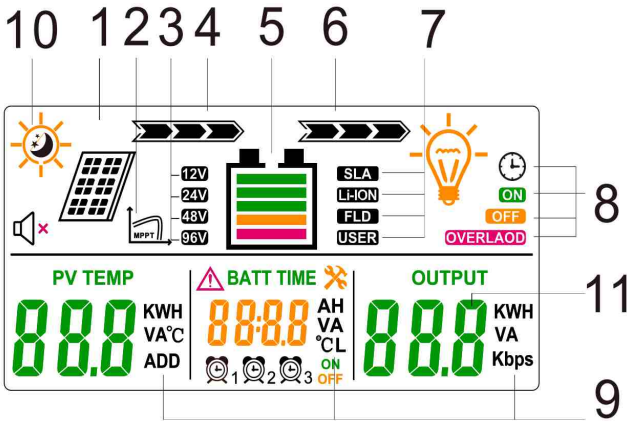
This series of MPPT is a common positive controller, PV array,battery and load of the positive pole can be grounded at the same time.

If the inverter or other starting current is loaded in the system, please connect the inverter directly to the battery.Do not connect with the controller's load terminal

If you use lithium batteries, set the corresponding battery type before using them.
(For details, see P8-4.1 / P9-4.2)

3.Screen display

3.1 Icon Meaning

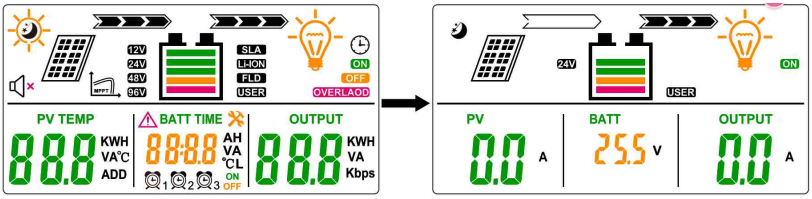


1	Solar Panel	Battery Type	7
2	Working Status	load working mode &status	8
3	System Voltage	Parameters Unit	9
4	Charge Display	Day Or Night	10
5	Battery Capacity	Parameters Display	11
6	Discharge Display		

3.2 Button definition

Button meaning	Button pattern	Button function
MENU		Press and hold to enter or exit the settings screen. Short press to confirm; Load switch;
FORWARD		Loop the page forward
BACKWARD		Loop the page backwards

3.3 start up interface

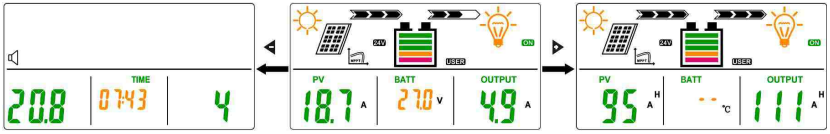


startup page　　working page

(1)Startup page:Boot interface

(2)Working page: By pressing bottom "M" to switch load on/off . The battery is properly connected to the controller,rated charging and discha-rging current, battery voltage, system voltage, battery type etc. can be checked in this page.

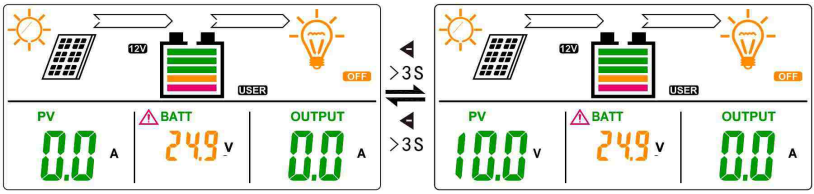
3.4 LCD main interface display



By pressing "-" or "+" to circulate interfaces. it will switch automatically to fault interface after 15S if something is out of work. By pressing "-" or "+" to cancel "error code" interface.

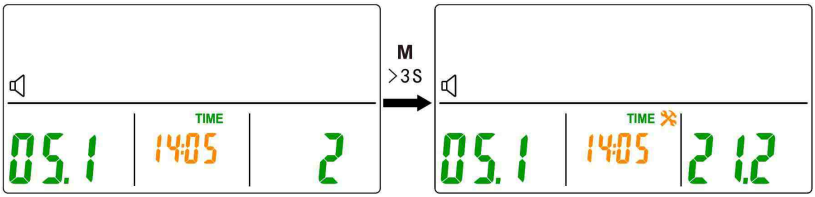
Notice:
below situation valid only for products with loading control function.

3.5 View the PV input voltage



By long pressing "-" over 3S to check PV input voltage value.

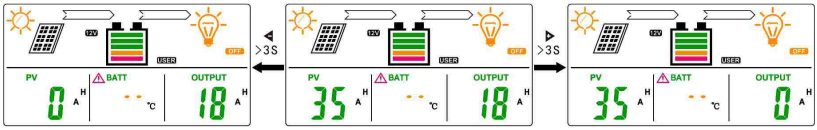
3.6 time setting



By long pressing "M" over 3S to set real time clock and date. Above screen from left to right,it means Day,Month,Hour,Minute,Year and week.

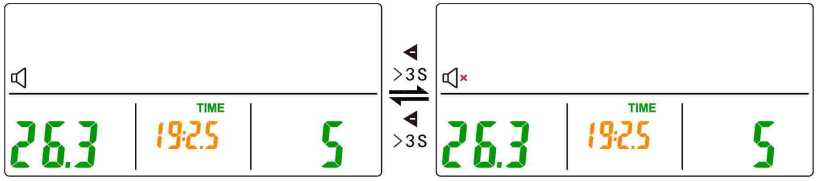
Notice: for month display, O means Oct., N means Nov., D means Dec.

3.7 Cumulative charge and discharge display



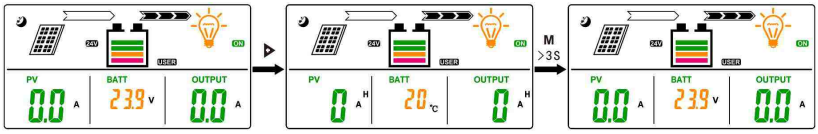
After the cumulative charge and discharge reaches 65KAH, the system accumulates again(You can hold down "-" to manually reset).

3.8 Adjustment of sound volume



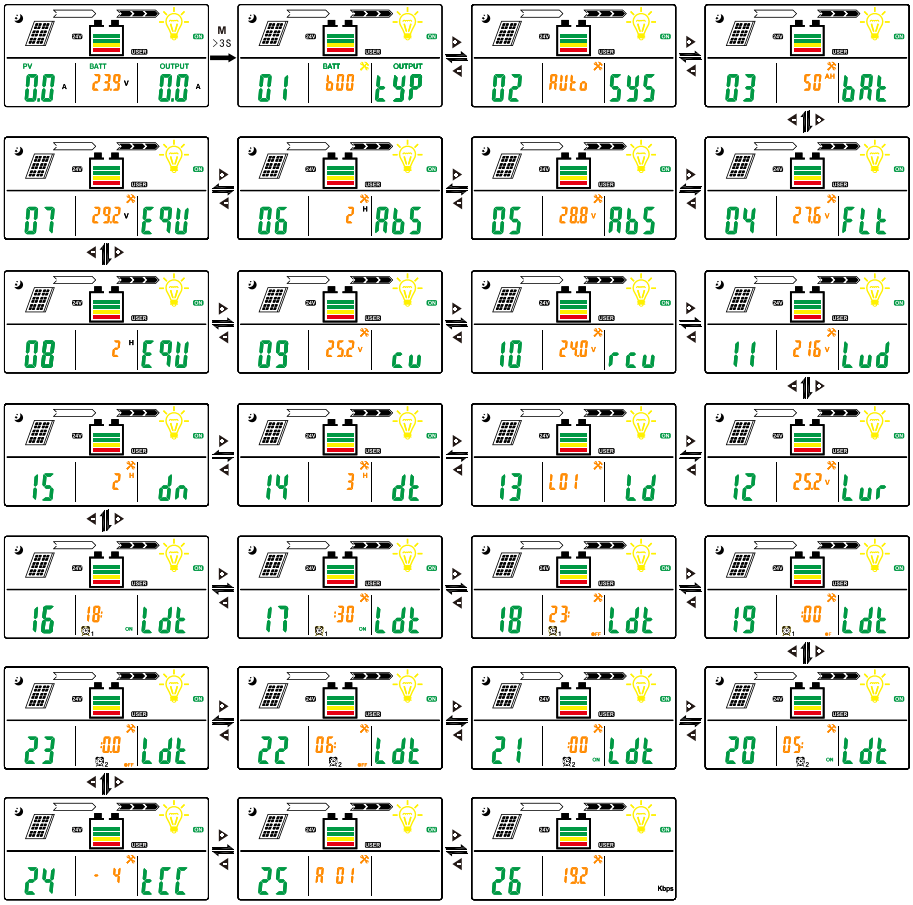
Press and hold "-" to adjust the volume.

3.9 Restore factory setting



Press the button "+" to second page and long press botton "M" to restore factory settings.

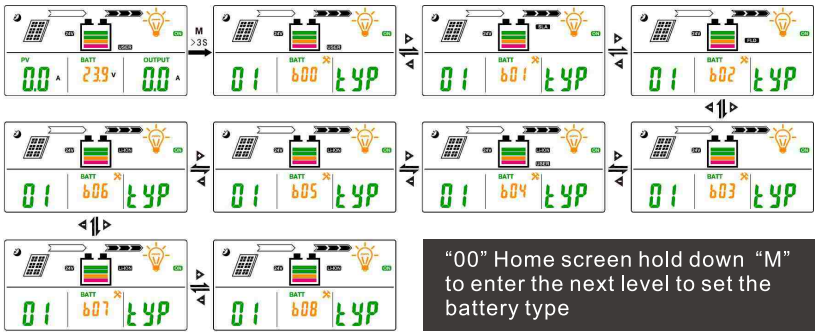
4.Page introduction



Loop main interface description(27 pages in total)

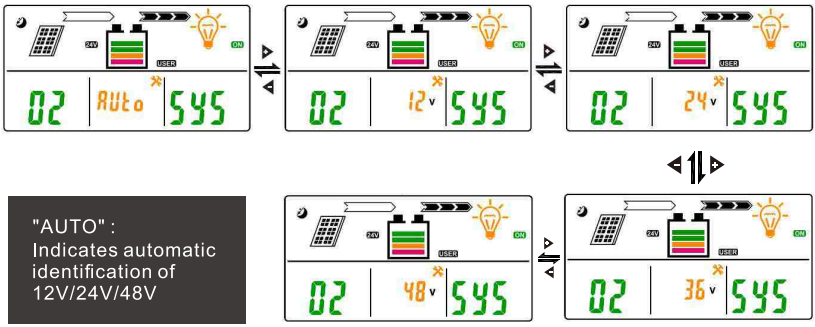
00	Work page (home page)	Lithium battery recover charging voltage(RCV)	10
01	Battery type	The battery will stop working if the voltage is too low	11
02	System voltage	Battery low volt. recovery charging	12
03	Battery capacity	Load working mode	13
04	Floating charge voltage	Load after dark working hours set	14
05	Absorption charge voltage	Load before dawn working hours set	15
06	Absorption charge time	Load time control and time setting	16-23
07	Equalizing charge voltage	Temperature compensation coefficient	24
08	Equalizing charging time	Communication Address Setting	25
09	Constant voltage charge of lithium battery(CV)	Serial port communication baud rate set	26

4.1 Battery type setting method



"00" Home screen hold down "M" to enter the next level to set the battery type

4.2 System battery voltage setting



"AUTO" :
Indicates automatic identification of 12V/24V/48V

Press ' M ' on the screen ' 02 ' to enter the next level and set the system battery voltage. After each voltage setting, the controller needs to be powered back on.

※ 36V is not automatically recognized and can be set as a fixed system voltage.

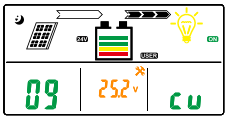
4.3 Battery type code meaning

Battery type symbol	Type meaning
B00	Lead-acid custom
B01	Sealed battery
B02	Flooded battery
B03	Gel battery
B04	Lithium battery customization
B05	3.2V-4 series of LiFePO4
B06	3.2V-5 series of LiFePO4
B07	3.7V-3 series polymer lithium battery
B08	3.7V-4 series polymer lithium battery

※ B04:Lithium battery User-defined type

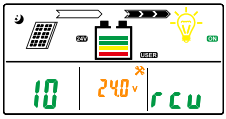
In lithium battery custom mode, manual operation is required,Set constant charge voltage (CV)

Page 09



In lithium battery custom mode, The recovery charging voltage needs to be set manually.(RCV)

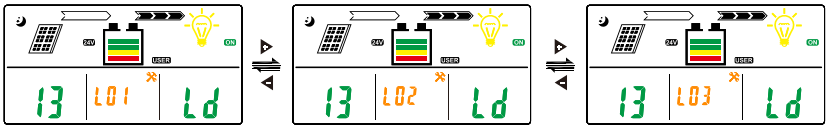
Page 10



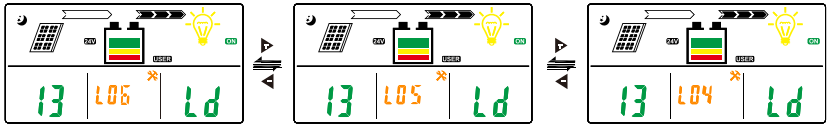
After fixing the system voltage, power on again, and then set (CV) and (RCV).

※ Lead-acid batteries do not support constant voltage charging(CV)

4.4 Set the load working mode



Press "M" on the interface "13" to enter the next level and set the load working mode



L01:Regular mode(The load continues working for 24hs a day)

L02:Light control mode(The load works only at night)

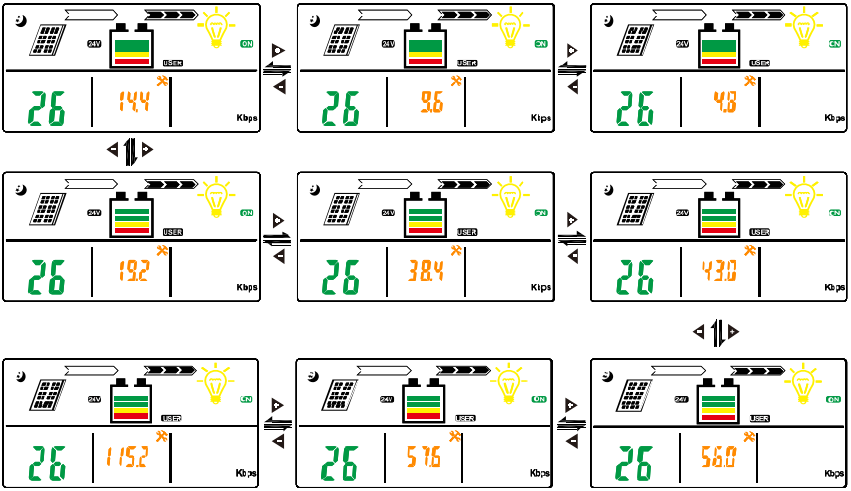
L03:Reverse light control mode(The load works only during the day)

L04:Dual time control mode(light control first)

L05:Time control mode(Set load works time)

L06:Charge only mode(charge-only)

4.5 Serial port communication baud rate setting



Press "M" on screen "26" to go to the next level and set the baud rate.

5.Fault code

Error code	Reason	Controller status	Solution
Ex1	Battery over discharge	1. Battery voltage is less than 10.8v 2. Loads will be disconnected	Charge the battery
Ex2	Battery over voltage	Loads will be disconnected and battery charging will automatically stop	Check whether the system voltage matches the battery voltage; Ensure that the high voltage disconnect voltage does not exceed the battery voltage and reconnect the PV
Ex3	Over load	If discharging current is 1.2times the rated controller's current. the load will disconnect automatically after 60s. if 1.5 times, the load will disconnect after 10s. The load work after 6mins	Reduce the load output, and switch on load manually or wait 6 minutes for autoswitch-on by controller
Ex5	PV input over voltage protection	150V / 175V / 200V / 250V	150V / 175V / 200V / 250V
		Automatic protection greater than open circuit voltage	Less than open circuit voltage back to normal
		>149V / >174V / >199V / >249V	<146V / <171V / <196V / <245V
Ex6	Controller overheating	The controller will stop charging when it's temperature exceeds 88℃ and restart to work when it's temperature is below 75℃	Cool down the controller.
Ex7	Internal temperature sensor doesn't work	The controller will work normally	
Ex8	Controller will restart after setting system voltage		Disconnect PV array first and disconnect battery Power on again.

"E" stands for "Error";
"X" indicates the number of errors. If there are multiple errors, press "+" or "-" to check the loop.
"1-8" indicates the code name.

6.Technical parameter

Input								
Maximum PV open circuit voltage		<150V						
		<175V						
		<200V						
		<250V						
Minimum PV voltage		20V/40V/60V/80V						
Rated Charge Current		30A	40A	50A	60A	80A	100A	120A
Maximum input power	12V	390W	520W	650W	780W	1040W	1300W	1560W
	24V	780W	1040W	1300W	1560W	2080W	2600W	3120W
	36V	1170W	1560W	1950W	2340W	3120W	3900W	4680W
	48V	1560W	2080W	2600W	3120W	4160W	5200W	6240W
Output								
System voltage		12V/24V/36V/48V Auto						
Rated Discharge Current		20A	20A	30A	30A	40A	50A	50A
Self-consume		⩽35mA(48V)						
MPPT highest accuracy		99%						
Maximum charging efficiency		97%						
Charging control mode		Multi-stage(MPPT, Absorption, Float,Equalization,CV)						
Float charge		13.8V/27.6V/41.4V/55.2V						
Boost charge		14.4V/28.8V/43.2V/57.6V						
Equalization charge		14.6V/29.2V/43.8V/58.4V						
Low voltage disconnect voltage		10.8V/21.6V/32.4V/43.2V						
Low voltage recovery voltage		12.6V/25.2V/37.8V/50.4V						
Load control mode		Normal, light control, light and timing control, timing control, reverse light control						
Light control point voltage		5V/10V/15V/20V						
Battery Type		GEL, SLD,FLD and USR(default),Lithium batteries customization 3series 3.7V,4 series 3.7V,4series 3.2V,5series 3.2V						
Other								
Human interface		Color LCD with backlight, 3 buttons						
Cooling mode		Iron case heat sink and cooling fan						
Wiring		High current copper terminal≤25 mm² (3AWG)						
Temperature probe		10K, line length 3 meters						
Communication mode		RS485,RJ45 port						
Working temperature range		-10~+50℃						
Storage temperature range		-30~+80° C						
Humidity		10%~90% No condensation						

Notice

Please operate at the ambient temperature allowed by the controller.
If the ambient temperatrue exceeds the allowable range of the controller,please derate it

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